

Experimental Study on Subcutaneous Injection of *Erysipelothrix Rhusiopathiae* on Rat (*Rattus Norvegicus*) Organs

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Background & Objectives: *Erysipelothrix rhusiopathiae* (*E. rhusiopathiae*) is a gram positive and facultative anaerobic bacteria which cause of diseases in human the bacteria are found in tonsils and gastrointestinal tract of companion animals. The objective of the current study was to evaluate the histomorphometric changes in internal organs of rat due to subcutaneous injection of *E. rhusiopathiae*.

Methods: In this study three groups of triplex rats (*Rattus norvegicus*) in same age and gender were selected. The group one was assigned as control and the two other groups were assigned as test groups. In the first week of examination the control group of rats was injected by sterile normal saline subcutaneously. The group two of rats was injected by 104 CFU/ml of *E. rhusiopathiae* and the group three of rats was injected by 104 CFU/ml of bacteria. One week later one rat from each group after necropsy were sampled from heart, liver and lymphatic nodes. Samples were examined by histomorphometric and bacteriological methods. These examinations were done in the second and third weeks on test and control groups of rats.

Results: In the group two rats in comparison with control group the obtained samples after first week of injection showed mild congestion. The group three of rats in microscopic examination after first and second weeks of injection demonstrated of inflammation and congestion in lymph nodes, and congestion in epicard and liver. In this group in the third week after injection, mild degree of hyperemia was observed. Macroscopic lesions due to injection of bacteria were observed as hyperemia, enlargement and haemorrhagia in superficial lymph nodes.

Conclusion: According to the macroscopic and microscopic results the lesions in the rat mostly are observed in lymphatic tissues whereas in chronic infections of *E. rhusiopathiae* are observed in tissues like heart.

Keywords: *Erysipelothrix rhusiopathiae*; Subcutaneous Injection; Rat